



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/625,586

07/23/2003

Minshon J. Chiou

KB4615USNA

7746

23906

7590

06/12/2006

E I DU PONT DE NEMOURS AND COMPANY  
LEGAL PATENT RECORDS CENTER  
BARLEY MILL PLAZA 25/1128  
4417 LANCASTER PIKE  
WILMINGTON, DE 19805

EXAMINER

TORRES VELAZQUEZ, NORCA LIZ

ART UNIT

PAPER NUMBER

1771

DATE MAILED: 06/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/625,586	Applicant(s) CHIOU ET AL.	
	Examiner Norca L. Torres-Velazquez	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2006.  
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-19 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 23 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 04, 2006 has been entered.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1- are rejected under 35 U.S.C. 103(a) as being unpatentable over CHIOU et al. (US 6,133,169) in view of HOWLAND (US 6,720,277 B1).

CHIOU et al. disclose a combination of layered structures for protection from threats of ice pick and knife penetration and, also, ballistic threats. (Abstract) The reference teaches a the plurality of tightly woven fabric layers that are made form yarns of high strength fibers wherein the yarns generally have a linear density of less than 500 dtex and, preferably, the individual filaments in those yarns have a linear density of 0.2 to 2.5 dtex. The reference teaches the use of para-aramid fibers, preferably poly (p-phenylene terephthalamide). The preferred linear density for the yarns is 100 to 500 dtex and those yarns are preferably woven to a fabric tightness factor of 0.75 to 1.00. (Col. 3, lines 39-67) It is noted that the reference discloses that the yarns should exhibit a tenacity of greater than 20 grams per dtex and as much as 50 grams per dtex or

Art Unit: 1771

more. (Col. 4, lines 1-3). However, it is the Examiner's interpretation that the "should exhibit" teaching is equivalent to a preferred range of values since the reference does not indicate that such range has some particular criticality to the invention, or that having a lower tenacity would have a detrimental effect in the final product. Features which are merely preferred are not to be considered critical. In re Goffe, 542 F.2d 564, 567, 191 USPQ 429, 431 (CCPA 1976).

CHIOU et al. is silent to the use of yarns made from staple fibers.

HOWLAND discloses a protective fabric of with enhanced resistance to penetration by knives and ballistic penetration. (Col. 2, lines 7-8) The reference teaches the use staple fiber yarns, the fibers with tenacity greater than 10 grams/denier and denier less than 1.5. (Refer to Claims 7-9) The reference teaches that the yarns comprise high modulus, high breaking strength (greater than 15 grams per denier) yarns. (Col. 3, lines 1-5) HOWLAND teaches the use of continuous filament yarn type and also that staple yarn type can be used, and that staple yarns can produce fiber at lower costs. (Refer to Col. 7, lines 47-58)

CHIOU et al. discloses the claimed invention except that it uses continuous filaments yarns instead of staple fiber yarns (Refer to Col. 7, lines 47-54), HOWLAND shows that staple fiber yarns are equivalent structures known in the art of puncture resistance materials. Therefore, because these two materials were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute staple fiber yarns for the continuous filament yarns.

Although the prior art of HOWLAND does not explicitly teach the claimed energy to break of the staple fiber yarns, it is reasonable to presume that this property is inherent to yarns of HOWLAND. Support for said presumption is found in the use of like materials (i.e. staple

Art Unit: 1771

fiber yarns made from aramid fibers). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of an energy to break of about 8 to less than 30 J/g would obviously have been present one the CHIOU et al. product made with the staple fiber yarns of HOWLAND is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection made above under 35 USC 102.

***Response to Arguments***

4. Applicant's arguments filed on April 04, 2006 have been fully considered but they are not persuasive.

- With regard to arguments indicating that the Howland reference is not relevant to the subject application, it is noted that Howland '277 was filed April 9, 1999.
- Applicants argue that Chiou et al. disclose continuous filament yarns having a tenacity of greater than 20 grams per dtex and as much as 50 grams per dtex or more (refer to Col. 4, lines 1-3). Applicants conclude that Chiou et al. clearly teaches away from using staple yarn having the tenacity recited in the present invention. It is noted that while Chiou et al. is silent to the use of staple yarns, it does not teach away from their use. The Examiner has relied on the teachings of Howland to show that continuous yarns and staple yarns are equivalent materials in penetration resistant articles, and it is further noted that the use of staple yarn is a less costly alternative. It is noted that the staple yarns taught by Howland have tenacity greater than 10 grams/denier. (Refer to claims) With regard to argument indicating that Chiou et al. teaches away from using staple yarn having the claimed tenacity, it is the Examiner's interpretation that the "should exhibit"

Art Unit: 1771

teaching of Chiou et al. is equivalent to a preferred range of values since the reference does not indicate that such range has some particular criticality to the invention, or that having a lower tenacity would have a detrimental effect in the final product. Features which are merely preferred are not to be considered critical. In re Goffe, 542 F.2d 564, 567, 191 USPQ 429, 431 (CCPA 1976). It is further noted that Applicants have failed to show that the now claimed tenacity range of 3 to 16 grams per dtex has criticality to the claimed invention. On page 8, lines 8-12 of the Specification, a tenacity range of 5-16 g/dtex is disclosed as a preferred range.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 571-272-1484. The examiner can normally be reached on Monday-Thursday 8:00-5:00 pm and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1771

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Norca L. Torres-Velazquez  
Primary Examiner  
Art Unit 1771

June 5, 2006